भारतीय मानक
Indian Standard

IS 17870 : 2022

वाणिज्यिक प्रेशर कुकर — विशिष्टि

Commercial Pressure Cooker — Specification

ICS 98.540.50

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भारतीय मानक ब्यूरो
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April 2022 **Price Group 4**

Utensils, Cutlery Domestic Hardware Sectional Committee, MED 33

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Utensils, Cutlery Domestic Hardware Sectional Committee had been approved by the Mechanical Engineering Divisional Council.

This standard covers pressure cookers above 24 litres and upto 100 litres. This commercial cooker is for cooking purpose only.

The requirements of domestic pressure cookers (upto 24 litre) are covered in IS 2347 'Domestic pressure cooker — Specification'.

While drafting this standard, assistance has mainly derived from following standards:

IS 2347 : 2017 Domestic pressure cooker — Specification

BS EN 12778 : 2002 Cookware. Pressure cookers for domestic use

The relevant SI units and corresponding conversion factors are given below for guidance:

Pressure 1Pa (Pascal) = 1 N/m^2

1 kgf/mm^2 = 9.806 65 MPa

The composition of the committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COMMERCIAL PRESSURE COOKER — SPECIFICATION

1 SCOPE

This standard cover the requirements for commercial pressure cookers of capacity above 24 litres and upto 100 litres.

2 REFERENCES

The standards given in Annex A contain provisions, which through reference in this text, constitute provisions to this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed in Annex A.

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Commercial Pressure Cooker — A closed commercial pressure cooking vessel for use with external heat source and capable of maintaining nominal cooking steam pressure of 0.8 kgf/cm^2 gauge nominal (80 kN/m^2 approximately).

3.2 Body Capacity — Maximum quantity of water that can be contained in the cooker body, when placed on a flat, horizontal surface.

NOTE — The body capacity shall be equal to or more than two third of the gross nominal capacity of cooker as specified in **3.10**.

3.3 Cooking Capacity — The maximum cooking capacity of the vessel upto two-third of the capacity as specified in **3.2**.

3.4 Container — Vessel which is placed inside the pressure cooker for cooking different foods separately. It is also known as a separator.

3.5 Grid — Grid is used inside a pressure cooker to ensure that there is a gap between the separator and the cooker inside base so that the food does not burn. This may be also used for cooking food in steam without getting into direct contact with water or base of the cooker. The grid shall be supplied with commercial pressure cooker. Normally, diameter of the grid shall be minimum seventy percent of the inside diameter of the cooker body. Normally, minimum height of the grid shall be 10 mm.

3.6 Stand —This is to enable transfer of the cooker from the stove. The same stand or a separate stand may be used to keep the lid when not in use (normally the lids are kept upside down), so that the pressure gauge and vent tube does not get damaged. The stand may be supplied with commercial pressure cooker as per to the agreement to between the manufacturer and the purchaser.

3.7 Nominal Cooking Steam Pressure — The pressure at which the cooker operates, within a limit of ± 10 percent of the declared nominal cooking steam pressure. The drop in the pressure after operation of the PRD shall not be more than 30 percent of the nominal cooking steam pressure.

3.8 Pressure Regulator Device — The device which regulates the pressure inside the pressure cooker during its use.

3.9 Safety Relief Device — The device which prevents the pressure cooker from exceeding the safety pressure limit.

3.10 Gross Nominal Capacity of Cooker — The full water capacity of the vessel, that is, total internal volume of the cooker with its lid in position.

4 GROSS NOMINAL CAPACITY

The gross nominal capacity of cooker shall be above 24 litre and upto 100 litre. The gross nominal capacity shall be expressed only in complete litre units. The permitted tolerance on the gross nominal capacity shall be +5/– 0 percent.

4.1 The gross nominal capacity of the cooker shall be tested as given in IS 2347.

4.2 The body of the cooker shall be kept on flat and horizontal surface. The cooker shall be filled with water up to the brim with the help of a measuring jar. The volume of the water measured shall be the body capacity of the cooker.

5 MATERIAL

5.1 Body, Lid, Containers and Grid — The body, lid of the cooker, the containers and grid shall be made from aluminum alloys conforming to designation 19000, 19500, 31000 or 40800 of IS 21 or stainless-steel conforming to designation 304 of IS 5522.

5.1.1 If stainless steel pressure cooker is provided with composite bottom, the composite bottom shall conform to IS 15960.

NOTE — The staining test as per IS 15960 is also applicable for stainless steel pressure cooker without the composite bottom

5.1.2 The stand for the pressure cooker body and/or lid shall be fabricated of stainless steel wire as per IS 6527 with defect free weld.

5.1.3 The body of the cooker if made of 3 ply construction material, it shall satisfy the requirements as prescribed of IS 2347.

5.2 Fusible Safety Devise — The chemical composition of the fusible plug shall be such that it melts/ejects before a gauge pressure not greater than 3 times the nominal steam cooking pressure is reached. Maximum lead content shall not exceed 0.05 percent by mass in fusible plug pellet, when determined by any standard instrumental method or chemical method. The orifice of the pellet shall be minimum of 8 mm diameter.

5.3 Gasket — The gasket shall conform to IS 7466.

5.4 Handles and Knobs — Construction and material of the handle/knob shall conform to IS 13395.

NOTE — Bakelite handle shall not be used.

5.5 Pressure Regulating Device — The pressure regulating device shall conform to IS 2347.

5.6 Vent Seal Pin for Pressure Regulating Device — The vent seal pin for pressure regulating device shall conform to IS 2347.

5.7 Vent Pipe — The vent pipe shall conform to IS 2347.

5.8 Vent Pipe Nut — The vent pipe nut shall conform to IS 2347.

5.9 Spring — The spring shall conform to IS 2347

5.10 Resettable Safety Devise — Gasket as per IS 7466 or similar to **5.5** or a spring loaded device, which operates between 1.25 to 2.5 times the nominal operating pressure.

5.11 Visual Pressure Indicator — Visual pressure indicator shall be made of aluminum as per IS 737 or SS as per IS 5522. This device indicates that there is pressure inside the cooker (more than 0.04 Kgf/cm^2 or 4 kPa). The indicator may be coloured for easy of visibility.

5.12 Pressure Gauge — Brass or stainless steel mechanical, bourdon tube pressure gauge which displays the pressure inside the pressure cooker. Mechanical, bourdon tube pressure gauge which displays the pressure inside the pressure cooker, when connected to the pressure cooker. The pressure gauge indicator plate, may be coloured with nominal operating range in green, the safety relief operating pressure range in yellow and danger range in red (for example, up to 0.8 Kgf/cm^2 green, above 0.8 Kgf/cm^2 to 2.4 Kgf/cm^2 in yellow and above 2.4 Kgf/cm^2 in red). The minimum dial size of the vertical mounted pressure gauge shall be 50 mm. The pressure gauge shall be fitted on the lid. The pressure gauge shall be suitable for use with steam (supplier certificate shall be acceptable).

6 CONSTRUCTION

The construction of the pressure cooker shall be suitable to ensure an easy and safe handling, good performance and a reasonable life. The vessel shall be so constructed that no distortion takes place under normal conditions of use.

6.1 Pressure Regulating Device

Pressure regulation shall be affected by a free dead weight valve. There shall be no intermediate linkage between the vent pipe and weight valve.

6.1.1 The passage from the interior of the vessel giving access through the valve to the atmosphere shall be so arranged that, it is not liable to clog while the cooking is in progress. Minimum inside diameter of vent pipe shall be 4.0 mm for cooker of capacity above 24 litre and upto 50 litre. Minimum inside diameter of vent pipe shall be 5.5 mm for cooker above 50 litre and upto 100 litre

6.1.2 The pressure regulating device (PRD) shall be easy to clean and so designed that when working parts are removed, the obstructions shall be clearly visible.

6.1.3 The pressure regulating device shall be provided with a suitable lifting attachment, preferred metal or a SS metal ring to be fitted to the pressure regulating device.

6.1.4 The pressure regulating device dead weight shall not fall of when the lid is held upside down.

6.1.5 The vent pipe nut shall have a minimum of two holes. The combined area of the holes on the nut shall be more than the area of vent pipe hole. The holes shall not be blocked when fully tightened on the vent pipe.

6.1.6 Metallic chain may be provided for linking the PRD sleeve with vent tube, to prevent misplacement of the PRD sleeve; provided, it shall not affect the functioning of the PRD. The chain shall be made of brass or coated steel.

6.2 Safety Relief Device

In addition to a pressure regulating device, atleast two independent safety relief devices with separate and direct connection with the interior of the vessel shall be fitted. One shall be fusible safety device and the other can be may be of destructible type or resettable type.

6.2.1 The destructible type of safety relief device shall consist of an ejectable disc or fusible safety pellet. The fusible safety relief device, under its normal conditions of use, shall not be susceptible to corrosion or dimensional changes which might interfere with its satisfactory functioning.

6.2.2 In the resettable type of safety pressure relief device, the orifice or orifices, disclosed when the device functions, shall be of a form not susceptible to clogging by food or other contents in the cooker.

NOTE — Steam release from safety relief device should not put off the flame of the stove.

6.2.3 There shall be a visual pressure indicator which indicates the pressure inside the pressure cooker, when the pressure reaches 0.04 Kgf/cm^2 or 4 kPa. It shall be a pressure gauge or a pintle or both, in case a pressure gauge is used it should be able to indicate 0.04 Kgf/cm^2 or 4 kPa.

6.2.4 The cooker shall have an additional audible safety device which will have sound indicator, when the pressure inside the cooker reaches 1.5 times the nominal cooking steam pressure.

6.3 Temperature Responsive Pressure Relief Device — The temperature responsive pressure relief device shall conform to IS 2347.

6.4 Handles and Knobs

6.4.1 The handle and knobs shall confirm to IS 13395.

6.4.1.1 The handles used for opening and closing of the cooker shall lock when in closed position to avoid override. This is applicable to outer lid cooker.

6.4.2 The screws, studs/nuts, locking loop used for fitting handles and knobs shall be made from corrosion resistant material such as stainless steel or brass. The brackets may be made of aluminum or stainless steel or a combination of aluminum and stainless steel.

6.4.2.1 The rivets shall be made from corrosion resistant metal.

NOTE — The rivets shall be made from the material used for manufacture of the commercial cooker body. (Similar material, except that, the chemical property may be of improved strength to ensure the handles pass the requirements of IS 13995, aluminum for aluminum as per IS 21 or stainless steel for stainless steel as per IS 6527 or IS 6603 except the chemical property may be different, to improve on the strength). The material should be corrosion free material.

6.4.3 The cooker body in addition to handle used for opening and closing, shall have minimum two loop type metal handles (either side). Each handle shall be rivetted with minimum 4 rivets (two on each side). The design of the handles should be such that while using the handles, the bare hand should not touch the cooker body or lid.

NOTE — The rivets shall be made from corrosion resistant metal.

7 WORKMANSHIP AND FINISH

7.1 The body and the lid shall be free from wrinkles, scratches and other surface defects. The body and the lid shall be neat and clean.

7.2 The stand and components should be finished fine without any sharp edges, scratches and other surface defects. The position wherein the cooker and lid have to be placed has to be marked. The Height of the stand is based on the agreement between the purchaser and manufacturer.

7.3 The brass parts except the screws, studs and nuts shall be plated chromium over nickel and the plating shall conform to service condition number 2 of IS 1068.

7.4 The cooker, if hard anodized, fully or partially, shall satisfy the requirements as given in IS 2347.

8 TESTS

8.1 Air Pressure Test

The cooker shall pass the air pressure test as given in IS 2347.

8.2 Proof Pressure Test

The cooker shall pass the proof pressure test as given in IS 2347.

8.3 Operating Test for Pressure Regulating Device

The cooker shall pass the operating test for pressure regulating device as given in IS 2347.

8.4 Test for Safety Pressure Relief Device

The device shall satisfy the test prescribed in **8.4.1**. After the test, the cooker shall be in normal serviceable condition and the pressure regulating device shall satisfy the requirements of the test prescribed in **8.3**.

NOTES

1 This test shall be preceded by **8.3**.

2 If the induction plate separates off from the body of the cooker, the cooker fails the test.

8.4.1 The cooker shall be fitted with a calibrated pressure gauge on the lid, in the hole provided for the pressure gauge. It shall be filled with water equal in quantity to 1/16 of the internal volume of the cooker body and placed in still air on the industrial gas burner. Before starting the test it shall be ensured that the steam starts coming out of the vent pipe of the cooker steadily.

8.4.1.1 *For destructible devices* — The relief device shall be deemed to have passed the test, if it functions when the steam reaches a gauge pressure between 1 kgf/cm^2 to 2.4 kgf/cm^2.

8.4.1.2 *For resettable devices* — The device shall be deemed to have passed the test if it functions when the steam reaches a gauge pressure between 1 kgf/cm^2 to 2.4 kgf/cm^2.

8.4.1.3 *Audible safety device* — The device shall be deemed to have passed the test, if it functions when the steam reaches a gauge pressure between 1 kgf/cm^2 to 1.5 kgf/cm^2.

NOTE — In case the devices (*see* **8.4.1.1**, **8.4.1.2** and **8.4.1.3**) are provided in the same pressure cooker, each device is to be tested separately by blocking the other and all shall pass the test separately.

8.5 Bursting Pressure Test — The cooker shall pass the test for bursting pressure test as given in IS 2347.

8.6 Tests for Removal of Lid Under Pressure — The cooker shall pass the tests for removal of lid under pressure as given in IS 2347.

8.7 Test for Spring Loaded Mechanism — The cooker shall pass the tests spring loaded mechanism as given in IS 2347.

8.8 Test for SS Cookers — The stainless steel cookers, which have composite cooker base/bottom refer to the tests given in IS 15960.

8.9 Handles and Knobs — The cooker shall pass the tests for handles and knobs as given in IS 2347.

8.10 If the PRD is provided with the chain (*see* **6.1.6**), the chain shall be tested as per **8.10.1**.

8.10.1 Hang a weight of three times the weight of PRD sleeve for 4 h. There shall be no deformation or breakage of chain or its locating area.

8.11 Bottom Bulge Test — This test is applicable to induction bottom cooker only (also includes stainless steel and 3 ply induction compatible cooker). This test is a type test. The cooker shall be subjected to the test as prescribed in **8.11.1**. After the test, the cooker shall be stable when placed on a gas stove or induction cooktop and shall pass the test as prescribed in **8.3**. If the induction plate of the cooker detaches during or after this test, the cooker fails the test.

8.11.1 *Procedure*

8.11.1.1 Take a fresh sample of cooker. Conduct test as per **8.2**.

8.11.1.2 Fill the cooker with water equal to 1/16 part of the internal volume of the cooker. Put this cooker onto induction cooktop (full power). Note the timing for first PRD operation.

8.11.1.3 Test this cooker three times for destructible type safety pressure relief device as per IS 2347.

8.11.1.4 Repeat the test as per **8.11.1.2** with same induction cooktop. The noted time should be in tolerance of 10 percent of the initial reading.

8.12 Test for Lid Stand

8.12.1 Keep the lid on the stand, the pressure gauge or vent tube shall not get damaged. The lid shall not have scratches.

8.12.2 Three times the weight of the lid is placed on the stand for 4 h, there shall be no deformation of the stand.

8.12.3 *Pressure Cooker Stand*

8.12.3.1 The stand shall be stable when kept on a level surface.

8.12.3.2 Keep the stand on a surface 10^{O} inclined to the level surface of the ground. The stand with cooker shall not topple.

8.12.3.3 Keep the cooker on the stand. The cooker shall not have scratches.

8.12.3.4 Three times the weight of the cooker capacity is placed on the stand for 4 h, there shall no deformation of the stand.

8.13 Induction Bottom Cooker — The cooker shall pass the requirements for induction bottom as given in IS 2347.

9 SAMPLING

The sampling shall be done as given in IS 2347.

10 INSTRUCTIONS FOR USE

10.1 The manufacturer shall supply fully illustrated instructions for use with each cooker and shall include instructions or illustrations to identify features intended to reduce risks.

10.2 The instruction manual shall include the important safeguards specified in the **10.3**, **10.4** and **10.5**.

10.3 Unless otherwise indicated, the text of the instructions shall be verbatim to, or in equally definitive terminology as specified in **10.5**, except where specific conflict in the risk alluded to has been reduced. The items may be numbered. In a list of items, the phrases ‘Read all Instructions’, ‘SAVE THESE INSTRUCTIONS’ shall be first and last, respectively. Other important and safeguard items considered appropriate by the manufacturer may be inserted.

10.4 The instruction manual shall include instructions and caution statements for cleaning, user-maintenance operations recommended by the manufacturer and shall warn a user that any other servicing should be performed by an authorized service representative

10.5 The instruction manual shall include the following, when using pressure cookers, basic safety precautions should always be followed:

a) Read all instructions before use.
b) Before putting the pressure regulating device on the cooker, it should be ensured that the steam starts coming out of the vent pipe of the cooker freely.
c) Aluminum pressure cooker body should not be used for deep frying.
d) Do not touch hot surfaces. Use handles or knobs.
e) Close supervision is necessary when the pressure cooker is used near children.
f) Do not place the pressure cooker in a heated oven.
g) Extreme caution must be used when moving a pressure cooker containing hot liquids.
h) Do not use pressure cooker for other than intended use.
j) This appliance cooks under pressure. Improper use may result in scalding injury. Make certain cooker is properly closed before operating. *See* 'Operating Instructions'.
k) Do not fill the cooker over 2/3 of the body capacity. When cooking foods that expand during cooking such as rice or dried vegetable, do not fill the cooker over 1/2 of the body capacity. See 'Food Preparation Instructions' (such instructions shall appear elsewhere in the manual as noted in **10.1**).
m) Food items which tend to foam, froth, and sputter are likely to block the pressure release device. Therefore, while cooking such items, the cooking instructions supplied by the manufacturer shall be strictly followed:
    1) Always check the pressure release devices for clogging before use.n) Do not open the pressure cooker until the cooker has cooled and internal pressure has been reduced. If the handles of the body and lid are difficult to push apart, this indicates that the cooker is still pressurized. Do not use force to open the cooker. The pressure remaining in the cooker can be dangerous. *See* 'Operating Instructions' .
p) Do not use this pressure cooker for pressure frying with oil.
q) After the normal cooking pressure has been reached, reduce the heat so that all the liquid inside the cooker which creates the steam, does not evaporate.
r) Ensure the handles are not loose. If found loose please tighten the same before use.
s) It is recommended to replace fusible safety relief device after one year of every day use.
t) Use the Stand for placing of the lid, to ensure the pressure gauge and vent tube is not damage or remove the pressure gauge from the lid before washing.
u) Use the cooker stand for transfer of cooker from stove when full.
v) Use only side handle loops for lifting the cooker.
w) Use suitable lifting mechanism for lifting the cooker from the burner.
y) 'SAVE THESE INSTRUCTIONS'.

11 MARKING

11.1 Each cooker shall be permanently marked on the body:

a) Nominal cooking steam pressure,
b) Gross capacity,
c) Grade of material used for the manufacture of body and lid (for example, Lid-SS 304 or Al 19000 or SS304/Al 19000/SS 430, Body- SS 304 or Al 19000 or SS304/Al 19000/SS 430), and
d) Batch number.

NOTES

1 For Al cooker with induction bottom, the grade can be added as a sticker/leaflet.

2 The manufacturer shall declare and define the nominal body capacity along with the gross capacity of the cooker in the user manual.

11.2 Each cooker shall be permanently marked on the lid:

a) The name or recognized trade-mark of the manufacturer

11.3 Each cooker shall be indelibly and legibly marked on the lid or body with a notice emphasizing the reading of the instructions for example "IMPORTANT — Read Instructions before use".

11.4 Word 'Commercial' shall be marked on the body or lid.

NOTE — The location for lifting may be marked.

11.5 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

12 PACKAGING

Each cooker shall be suitable packaged to avoid any damage during transit. The packaging shall be eco-friendly.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
21 : 1992	Wrought aluminium and aluminium alloys for manufacture of utensils — Specification (*fourth revision*)
2347 : 2017	Domestic pressure cooker — Specification (*sixth revision*)
1068 : 1993	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium — Specification (*third revision*)
5522 : 2014	Stainless steel sheets and strips for utensils — Specification (*third revision*)
6527 : 1995	Stainless steel wire rod — Specification (*first revision*)
6603 : 2001	Stainless steel bars and flats — Specification (*first revision*)
7466 : 1994	Rubber gaskets for pressure cookers — Specification (*first revision*)
13395 : 2021	Performance of handles and handle assemblies attached to cookware — Specification (*first revision*)
15960 : 2013	Composite bottom stainless steel cooking utensils — Specification

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Utensils, Cutlery Domestic Hardware Sectional Committee, MED 33

Organization	*Representative(s)*
In Personal Capacity (*A-504, K.G Chandra Vista, OMR, Opposite to Satyabhama University, Sholinganallur, Chennai*)	Shri G. Shanmuganathan (***Chairman***)
Aligarh Locks Manufacturers and Traders Association, Aligarh	Shri P. L. Shiromani Shri Dhruv Mishra (*Alternate*)
Anna Aluminium Ltd, Cochin	Shri K. Chandrashekran Pillai Shri V. Thulasidharan (*Alternate*)
Butterfly Gandhimati Appliances Ltd, Chennai	Shri K. Shanmugavelu Shri A. Baskar (*Alternate* I) Shri A. Vijaimiratharaj (*Alternate* II)
Central Electrochemical Materials Science Division, Karaikudi	Dr S. Vasudevan Dr S. Muralidharan (*Alternate*)
Central Public Works Department, New Delhi	Shri Surinder Kumar Shri R. K. Saraswat (*Alternate*)
Consumer Voice, New Delhi	Shri B. K. Mukhopadhyay Shri M. A.U. Khan (*Alternate*)
Delhi Test House, New Delhi	Shri Dinesh Goel Shri Rohit Goel (*Alternate*)
D.P Garg and Co Pvt Ltd, Noida	Shri Sandip Garg
Federation of Hardware Mfg and Traders Welfare Association, Gurugram	Shri Ajay Bhasin Shri Rajesh Bansal (*Alternate*)
Godrej and Boyce Manufacturer’s Company Ltd, Mumbai	Shri K. Shitij R. Gaikar Shri Vinayak G. Nalgirkar (*Alternate*)
Hamilton Housewares Pvt Ltd, Mumbai	Shri Sanjay Moreshwar Mhatre Shri Induprakash Singh (*Alternate*) Shri Vikas Surendra Kumar Bhatia (*Young Professional*)
Hawkins Cookers Ltd, Thane	Shri B. S. Sethi Shri Rahul Pathak (*Alternate*) Shri Ravinder Mali (*Young Professional*)
Hindalco Industries Ltd, Disttt, Sonbhadra	Dr Vivek Srivastava Shrimati Manali Khandelwal (*Alternate*)
Jindal Stainless Limited, Hisar	Shri Biswabasu Roy Chowdhury Shrimati Jalaja Menon (*Alternate*)
Ministry of Defence (DGQA), Kanpur	Er M. Satyanarayana Shri S. J. Kolarkar (*Alternate*)
MSME Testing Centre, New Delhi	Shri S.V. Sharma Shri S. S. Yadav (*Alternate*)
National Metallurgical Laboratory, Jamshedpur	Dr S. Ghosh Chowdhury Dr K. L. Sahoo (*Alternate*)
Pritam Internationl, Baddi	Shri Rahul Khera Shri Rohit Khera (*Alternate*)

Organization	*Representative(s)*
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Royal Kitchen Appliances Pvt Ltd, Sonepat	Shri Suresh Agarwal
Sat Rattan Engineering Works, New Delhi	Shri G. L. Khera Shri Rahul Khera (*Alternate*)
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Member Secretary

Shri Chandan Gupta
Scientist 'D' (MED), BIS

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Amendments Issued Since Publication

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